

WA2891
3B
11/4/88

**Corrective Action and Storage Permit
PERMIT
ISSUED BY
ENVIRONMENTAL PROTECTION AGENCY**

Region 10, 1200 Sixth Avenue, HW-112
Seattle, Washington 98101

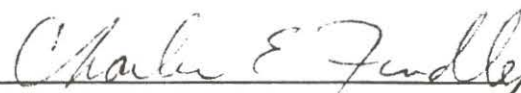
Issued in accordance with the applicable provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the regulations promulgated thereunder in Title 40 of the Code of Federal Regulations.

ISSUED TO: REICHHOLD CHEMICAL INCORPORATED

Location:	Mailing Address:
2340 Taylor Way	P.O. Box 1482
Tacoma, Washington 98401	Tacoma, Washington 98401

FILE COPY

This permit is effective as of December 4, 1988, and shall remain in effect until December 4, 1998, unless revoked and reissued (40 CFR § 270.41), or terminated (40 CFR § 270.43), or continued in accordance with 40 CFR § 270.51. This permit shall be reviewed five (5) years after the date of issuance in accordance with 40 CFR § 270.50 and shall be modified as necessary to assure that the facility continues to comply with the currently applicable requirements of Sections 3004 and 3005 of RCRA.


Charles E. Findley
Director, Hazardous Waste Division
Environmental Protection Agency
Region 10

Date 11/4/88

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INTRODUCTION

Permittee: Reichhold Chemical Incorporated
Environmental Protection Agency Identification Number: WAD 009 252 891

Pursuant to the Solid Waste Disposal Act (42 U.S.C. § 3251 et seq.), as amended by the Resource Conservation and Recovery Act of 1976 (42 USC § 6901 et seq., COMMONLY KNOWN AS RCRA) as amended by the Hazardous and Solid Waste Act of 1984 (HSWA), and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA also referred to herein as the Agency) codified and to be codified in Title 40 of the Code of Federal Regulations, this permit is issued to **Reichhold Chemical Incorporated** (Permittee), to operate a hazardous waste storage facility located at 2340 Taylor Way, Tacoma, Pierce County, Washington, at latitude 47° 15'596" North and longitude 122° 23'002" West, as described further in Attachment A.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments as amended) and the applicable regulations contained in 40 CFR Parts 124, 260 through 264, 268, and 270. Applicable federal regulations are those specifically referenced herein that are in effect on the date of final administrative action on this permit and any self-implementing statutory provisions and related regulations which, according to the requirements of HSWA are automatically applicable to the Permittee's hazardous waste management activities, notwithstanding the conditions of this permit.

The Agency's issuance of this permit is based upon the administrative record, as required by 40 CFR § 124.9. The Permittee's failure in the application or during the permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this permit (40 CFR §§ 270.41, 270.42 and 270.43), and/or initiation of an enforcement action, including criminal proceedings.

To the extent there are inconsistencies between the permit and the attachments, the language of the permit shall prevail. The Permittee must inform EPA of any deviation from, or changes in, the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions or which may affect any provisions of the permit in any way.

Further, this permit is based, in part, on the provisions of Sections 206, 212, and 224 of the Hazardous and Solid Waste Amendments of 1984, which modify Sections 3004 and 3005 of RCRA. In particular, Section 206 requires corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit, regardless of the time at which waste was placed in such unit and provides authority to review and modify the permit at any time.

DEFINITIONS

For the purpose of this permit, terms used herein shall have the same meaning as those in Title 40 of the Code of Federal Regulations (40 CFR Parts 124, 260 through 264 and 270) unless this permit specifically provides otherwise or unless the context otherwise requires. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

PART I - STANDARD CONDITIONS

I.A. Effect of Permit

The Permittee is authorized to store, treat, and dispose hazardous waste in accordance with the conditions of this permit and in accordance with 40 CFR §262.34. Any storage, treatment, or disposal of hazardous waste by the Permittee at this facility that is not authorized by this permit or by 40 CFR §262.34, and for which a permit is required under Section 3005 of RCRA, is prohibited. Compliance with this permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA as amended by HSWA for the hazardous waste activities identified and included in this permit.

I.B. Personal Liability

The Permittee shall hold harmless and indemnify the United States; the Agency; and officers, employees, and agents of the United States from any claim, suit, or action arising from the activities of the Permittee or its contractors, agents, or employees under this permit.

I.C. Personal and Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege, nor does this permit authorize any injury to persons or property or invasion of other private rights, and does not authorize any violation of federal, state, or local laws or regulations.

I.D. Permit Actions

I.D.(1) This permit may be modified, revoked and reissued, or terminated for cause by the Agency as specified in 40 CFR §§ 270.41, 270.42, and 270.43.

- I.D.(2) The filing of a request for a permit modification; or revocation and reissuance; or termination; or a notification of planned changes, noncompliance, or anticipated noncompliance on the part of the Permittee shall not stay the applicability or enforceability of any permit condition.
- I.D.(3) Except as provided by specific language in this permit or except for the Administrator's approval of a minor permit modification in accordance with 40 CFR § 270.42, any approved modification or change in design or operation of this facility to the extent any permitted operations are affected, or any approved modification or change in a hazardous waste management practice covered by this permit must be administered as a major permit modification prior to such change taking place, in accordance with 40 CFR § 270.41.

I.E. Severability

- I.E.(1) The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. Invalidation of any federal statutory or regulatory provision which forms the basis for any condition of this permit does not affect the validity of any other federal statutory or regulatory basis for said condition.
- I.E.(2) In the event that a condition of this permit is stayed for any reason, the Permittee shall continue to comply with the corresponding interim status standards in 40 CFR Part § 265 until final resolution of the stayed condition, unless the Administrator determines that compliance with the corresponding interim status standards would be technologically incompatible with compliance with other conditions of this permit which have not been stayed.

I.F. Duty to Comply

- I.F.(1) The Permittee shall comply with all conditions of this permit, except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit issued under 40 CFR § 270.61. Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of RCRA, as amended by HSWA, and is grounds for enforcement action; permit termination; permit modification; permit revocation and reissuance; or denial of a permit renewal application.
- I.F.(2) Compliance with the terms of this permit does not automatically constitute a defense to any action brought under Sections 3007, 3008, 3013 and 7003 of RCRA (42 U.S.C. §§ 6927, 6928, 6934, and 6973), Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. §9606(a)), as amended by the Superfund Amendments and Reauthorization Act of 1986, or any other federal or state law governing protection of public health or the environment. However, compliance with the terms of this permit does constitute a defense to any action alleging failure to comply with the applicable standards upon which this permit is based.

I.G. Duty to Reapply

The Permittee must submit a complete application for a new permit at least one hundred and eighty (180) days before this permit expires, unless a later date is granted by the Administrator. With the approval of the Administrator, the Permittee's reapplication may incorporate by reference, materials submitted as part of the original application.

I.H. Continuation of Expiring Permit

This permit and all conditions herein shall continue in force until the effective date of a new permit if the Permittee has submitted a timely, complete application (under 40 CFR § 270 Subpart B), and, through no fault of the Permittee, the Administrator does not issue a new permit under 40 CFR § 124.15 on or before the expiration date of the previous permit. In accordance with 40 CFR § 270.50, this permit shall be reviewed five years after the effective date and modified, as necessary, in accordance with 40 CFR § 270.41.

I.I. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.J. Duty to Mitigate

In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. Such mitigation shall not be a defense to enforcement.

I.K. Duty to Provide Information

The Permittee shall furnish to the Administrator within a reasonable time, any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this permit.

I.L. Inspection and Entry

The Permittee shall allow the Administrator, or his authorized representatives, upon the presentation of identification, credentials, or other documents as may be required by law, to:

- I.L.(1) Enter at reasonable times upon the Permittee's premises where hazardous or solid waste management units or activities are located or conducted, or where records must be kept under the conditions of this permit;
- I.L.(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- I.L.(3) Inspect at reasonable times any portion of the facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- I.L.(4) Sample or monitor, at reasonable times and for the necessary length of time, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.M. Reporting Planned Changes

The Permittee shall give notice to the Administrator, as soon as possible, of any planned physical alterations or additions to the facility which affect the permitted operations at the facility.

I.N. Certification of Construction or Modification

The Permittee must certify any new construction required pursuant to this permit has been constructed in accordance with accepted plans. The Permittee may not commence storage, treatment, or disposal in a new hazardous waste management unit or in a modified portion of an existing unit until:

- I.N.(1) The Permittee has submitted to the Administrator, by certified mail or hand delivery, a letter signed by the Permittee and an independent registered professional engineer stating that a hazardous waste management unit has been constructed or modified or closed in compliance with this permit; and
- I.N.(2) (a) The Administrator has inspected the modified or newly constructed hazardous waste management unit and has notified the Permittee in writing that he finds it is in compliance with the conditions of this permit; or
- (b) If within fifteen (15) days of the date of submission of the letter in permit condition I.N.(1), the Permittee has not received from the Administrator, by certified mail or hand delivery, a letter of his intent to inspect, prior inspection is waived and the Permittee may commence treatment, storage, or disposal of hazardous waste.

I.O. Reporting Anticipated Noncompliance

The Permittee shall give at least thirty (30) calendar days advance notice, in writing, to the Administrator of any planned changes in the facility which affect the permitted operations at the facility or activity that might result in noncompliance with permit requirements. If thirty (30) calendar days advance notice is not possible, then the Permittee shall give notice within twenty-four (24) hours of the time he becomes aware of the anticipated noncompliance. Such notice does not authorize any noncompliance with or modification of this permit.

I.P. Transfer of Permit

This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR § 270.41(b)(2) or § 270.42(d). Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270 and this permit.

I.Q. Twenty-four Hour Reporting

- I.Q.(1) The Permittee shall verbally report to the Administrator any noncompliance with this permit that might endanger human health or the environment, within 24 hours from the time the Permittee becomes aware of the noncompliance. The report shall include, but not be limited to:
- (a) Information concerning release of any hazardous waste that might cause an endangerment to public drinking water supplies; and,
 - (b) Any information of a release or discharge of hazardous waste or of a fire or explosion from the hazardous waste management facility that might threaten human health or the environment. The description of the occurrence and its cause shall include, but not be limited to:
 - (i) Name, address, and telephone number of the owner or operator;
 - (ii) Name, address, and telephone number of the facility;
 - (iv) Date, time, and type of incident;
 - (v) Name and quantity of material(s) involved;
 - (vi) The extent of injuries, if any;
 - (vii) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and,
 - (viii) Estimated quantity and disposition of recovered material that resulted from the incident.

(b) Any information of a release or discharge of hazardous waste or of a fire or explosion from the hazardous waste management facility that might threaten human health or the environment. The description of the occurrence and its cause shall include all information necessary for the Administrator to fully evaluate the situation and to develop an appropriate course of action.

I.Q.(2) Within fifteen (15) calendar days of the time the Permittee becomes aware of noncompliance that might endanger human health or the environment, the Permittee shall provide to the Administrator a written submission. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times; the anticipated time noncompliance is expected to continue if the noncompliance has not been corrected; corrective measures being undertaken to mitigate the situation; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

I.R. - Other Noncompliance

The Permittee shall report to the Administrator all other instances of noncompliance not reported under Conditions I.O. and I.Q. of this permit, at the time monitoring reports are submitted. The reports shall contain the applicable information listed in Condition I.Q. of this permit.

I.S. - Signature and Certification

All applications, reports, or other information submitted to the Administrator by the Permittee shall be signed and certified in accordance with 40 CFR §270.11.

I.T. Confidential Information

Any information submitted by the Permittee to the Administrator may be claimed as confidential by the Permittee in accordance with the applicable provisions of 40 CFR Part 2, and 40 CFR §270.12. The Permittee must provide a notification pursuant to Condition I.V. to the Department of Ecology and the Puyallup Indian Tribe that confidential information has been submitted to the EPA.

I.U. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in the permit application or in any report to the Administrator, the Permittee shall promptly submit such facts or corrected information. This reporting shall not constitute a defense for an enforcement action.

I.V. Reports, Notifications and Submissions to the Regional Administrator

All reports, notifications or other submissions which are required by this permit to be sent or given to the Administrator should be sent certified mail or given to:

Chief, Waste Management Branch
EPA Region 10
1200 6th Avenue
Seattle, Washington 98101
(206) 442-2804

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Informational copies of nonconfidential reports, notifications or other submissions being sent to the EPA should also be sent to:

Supervisor, Hazardous Waste Section
Washington Dept. of Ecology
Mail Stop PV 11
Olympia, Washington 98504

Environmental Commission
Puyallup Indian Tribe
Administration Building
1142 Broadway
Tacoma, Washington 98570

These are the current phone numbers and addresses and may be subject to change.

PART II - GENERAL FACILITY CONDITIONS

II.A. Design and Operation of Facility

- II.A.(1) Proper Design and Construction The Permittee shall design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, groundwater, or surface water which could threaten human health or the environment.
- II.A.(2) Proper Operation and Maintenance The Permittee shall, at all times, properly operate and maintain in accordance with sound engineering and scientific practice, all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee so as to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.
- II.A.(3) Minor Changes and As-builts The Permittee shall construct anything required by this permit in accordance with the accepted plans, designs and specifications that are included in this permit, except for minor changes deemed necessary by the Permittee to facilitate proper construction of the units either as an attachment or on the as-built drawings.

Minor deviations from the accepted designs or specifications necessary to accommodate proper construction must be noted on the as-built drawings and the rationale for those deviations must be provided in narrative form. After completion of construction, the Permittee shall submit final as-built drawings and the narrative report to the Administrator as part of the construction certification document specified in permit condition I.N.(1). In addition, the changes to any Attachments required by the as-builts shall be submitted.

II.B. Receipt of Contaminated Soil and Groundwater from Off-site

The Permittee may receive contaminated soil and groundwater from off-site, which may be generated during corrective actions conducted pursuant to this permit (Sections IV and V) for the purposes of storage and/or treatment. Storage must be in drums, tanks, or waste piles designed to meet 264 requirements.

II.C. General Waste Analysis

II.C.(1) The Permittee shall follow the procedures of the Waste Analysis Plan, included as Attachment 2 of this permit. The Permittee shall maintain a copy of the latest approved Waste Analysis Plan, included as Attachment 2 of this permit, at the facility until the facility is fully closed and certified. Any soil within areas of the hazardous waste management unit as defined in IV.A.(2) is listed waste F021 and is subject to the land ban regulations. Any soil within the Hazardous Waste Management Area (HWMA) as defined in IV.A.(2) is considered to be contaminated (based on the Preclosure Investigation) for the purpose of treatment and storage on-site unless sampling indicates no hazardous constituents above the Clean-up Standards for Soil.

Movement of contaminated soil within the hazardous waste management unit areas of the Hazardous Waste Management Area (HWMA) will not trigger the land disposal restrictions. Movement of contaminated soil within the other (SWMU) areas of the HWMA for the purpose of grading and treatability studies pursuant to plans accepted and/or modified by the Agency will not trigger the land disposal restrictions.

- II.C.(2) The Permittee is required to re-analyze each waste stream on a yearly basis on or before the effective date of the permit anniversary, or to document in the operating record that this analysis is unnecessary because the products used in the process, the process itself, and other factors controlling waste composition have not changed since the most recent waste analysis. The Permittee is required to analyze any new waste stream prior to initial storage and/or disposal.

II.D. Security Procedures

The Permittee shall comply with the Security Procedures of 40 CFR 264.14 as contained in Attachment 3 of this permit. As modified with the addition of the following:

The facility will be locked and/or guarded at all times.

II.E. Inspection Plan

- II.E.(1) The Permittee shall follow the procedures of the approved Inspection Plan, included as Attachment 4 of this permit.

- II.E.(2) The Permittee shall remedy any deterioration or malfunction discovered by an inspection as soon as practical as required by 40 CFR 264.15(c) and Attachment 4. Inspection reports shall be recorded and maintained as required by 40 CFR 264.15(d) for at least three years from the inspection date.
- II.E.(3) The Permittee shall maintain a copy of the Inspection Plan, included as Attachment 4 of this permit, at the facility until post-closure is completed and certified in accordance with I.N.
- II.E.(4) The Permittee may add inspection requirements to an existing inspection form in cases where such additional requirements will result in a more comprehensive or detailed Inspection Plan without receiving a permit modification. The Permittee must place in the operating record such a revised inspection form, accompanied by a narrative explanation, and the date the revision became effective.
- II.E.(5) The Inspection Plan (Attachment 4) is revised to include:
- (a) a daily inspection of the loading and unloading areas to assure that no waste materials have accumulated in the area during daily operations;
 - (b) personal protective equipment in addition to the SCBA (items that shall be listed include respirators, hard hats, gloves and boots).
 - (c) the fire sprinkler system and the items on the emergency equipment list as amended by II.G.(1) are added to the inspection logs, and
 - (d) the printed and handwritten signature of the inspector and the time of the inspection are added to the inspector logs.

II.F. Personnel Training

- II.F.(1) The Permittee shall ensure that all personnel who handle hazardous waste are properly trained in hazardous waste management, safety and emergency procedures, as applicable to their job description, in accordance with the Permittee's Training Plan. These personnel shall be trained in accordance with the Training Plan as included in Attachment 5 of this permit as modified with the addition of the sentence in Condition II.F.(3). Documentation of training shall be maintained as specified in Attachment 5.
- II.F.(2) The Permittee shall maintain a copy of the Training Plan, included as Attachment 5 of this Permit, at the facility until the facility has completed post-closure.
- II.F.(3) When handling hazardous waste, personnel who have not received training must be directly supervised by an individual who has completed training in accordance with the Training Plan in Attachment 5.

II.G. Program to Prevent Hazards

- II.G.(1) Required Equipment At a minimum, the Permittee shall equip the facility with the equipment set forth in Attachment 6 and Attachment 10, and in 40 CFR § 264.32. The emergency equipment list in Attachment 6 shall be modified to include the following items:
- (i) 1 drum repair kit;
 - (ii) 1 pump and associated hose (exclusive to emergency use only);
 - (iii) all equipment required under permit Condition II.E.(5); and,
 - (iv) sorbent booms and pads sufficient to contain and/or adsorb spills of the estimated maximum volume of liquids to be stored (minimum of 5% of total volume).

- II.G.(2) Testing and Maintenance of Equipment The Permittee shall test and maintain the equipment specified in the previous permit condition, as necessary, to assure its proper operation in time of emergency as provided in Attachment 6.
- II.G.(3) Access to Communications or Alarm System The Permittee shall provide and maintain immediate access to the communications and alarm systems as required by 40 CFR § 264.34 wherever hazardous waste is being poured, mixed, spread, or otherwise handled.
- II.G.(4) Required Aisle Space At a minimum, the Permittee shall maintain sufficient aisle space (3 feet) to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility used for treating, storing, or disposing of hazardous wastes or materials contaminated with hazardous constituents in an emergency.
- II.G.(5) Arrangement with Local Authorities The Permittee shall attempt to maintain arrangements with state and local authorities as required by 40 CFR § 264.37. If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal with a letter to the Agency. A copy of this letter must be kept in the operating record. Such refusal shall not relieve the Permittee of any obligation under Attachment 6.
- II.G.(6) General Requirements for Ignitable, Reactive or Incompatible Wastes The Permittee shall comply with the requirements of 40 CFR § 264.17(a) and the requirements of Attachment 6 and Attachment 10. The ignitable container storage area shall be designated as an area restricted from smoking at all times and from open flames unless activities are performed under a burning/welding permit.

II.H. Contingency Plan

- II.H.(1) Implementation of Plan The Permittee shall immediately carry out the provisions of the Contingency Plan as provided in Attachment 7 pursuant to 40 CFR § 264.56 whenever there is fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.
- II.H.(2) Copies of Plan The Permittee shall maintain a copy of the Contingency Plan (Attachment 7) pursuant to 40 CFR § 264.53 at the Permittee's facility, and shall submit a copy to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.
- II.H.(3) Amendments to Plan The Permittee shall review and immediately amend the Contingency Plan (Attachment 7) pursuant to 40 CFR § 264.54, if necessary, and in accordance to § 264.112(c).
- II.H.(4) Emergency Coordinator The Permittee shall comply with the requirements of 40 CFR § 264.55, concerning the emergency coordinator as provided in Attachment 7, pursuant to § 264.55.

II.I. Record keeping, and Reporting

- II.I.(1) The Permittee shall follow the record keeping and recording requirements in accordance with 40 CFR §§ 264.73, 264.74, 264.75, 264.77 and the Waste Analysis Plan, included as Attachment 2 of this permit.
- II.I.(2) Operating Record The Permittee shall maintain a written operating record at the facility until post-closure period is complete and certified in accordance with I.N. The Permittee shall also record all information referenced in this permit in the operating record including the following information as the information becomes available. Such information shall be recorded in accordance with 40 CFR §264.73 and §264.77:

- a. a current map showing the location of hazardous waste within the facility;
- b. records and results of each waste analysis performed in accordance with this permit;
- c. summary reports and details of all incidents that require implementation of the contingency plan;
- d. records and results of all inspections;
- e. groundwater monitoring, testing, analytical data, and summary reports required by this permit and 40 CFR Section 264, Subpart F;
- f. all closure, interim measures, final corrective action, and post-closure cost estimates and financial assurance documents prepared pursuant to permit conditions II.K and II.P;
- g. a certification by the Permittee, no less often than annually, that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment;
- h. the information contained in the notice required by a generator under 40 CFR §268.7(a)(1), except for the manifest number; and,
- i. i. the information contained in the notice required by a generator under 40 CFR §268.7(a)(2), except for the manifest number; or,

- ii. the information contained in the notice required by a treater under 40 CFR §268.7(b)(1), except for the manifest number;
- j. reports to the Administrator to address releases, fires, and explosions specified in § 264.56(j);
- k. facility operation and maintenance records and reports as required by this permit; and
- l. dates and methods of waste treatment must be entered into the operating record.

II.I.(3) Availability, Retention, and Disposition of Records The retention period for all records required under this permit is automatically extended during the course of any unresolved enforcement action regarding the facility or as requested by the Agency.

II.I.(4) Biennial Report The Permittee shall submit a biennial report covering facility activities to the Administrator in accordance with 40 CFR §§ 264.75 and 270.30(1)(9).

II.J. Closure

II.J.(1) The Permittee shall meet the general closure performance standard as specified in 40 CFR § 264.111 during closure of all hazardous waste management unit areas, the Hazardous Waste Management Area (HWMA), and the groundwater treatment facility. Compliance with 40 CFR § 264.111 shall require closure of each waste management unit in accordance with the Closure Plan included as Attachment 8 of this permit and clean-up of all areas to below the soil clean-up standard of Section IV of this permit.

II.J.(2) Attachment 8 shall be modified as follows:

- (a) All sampling and analysis should be done in accordance with SW 846.
- (b) All decontamination rinseate and materials shall be assumed to contain hazardous constituents and be properly disposed of or decontaminated.

II.J.(3) Minor deviations from the permitted closure procedures necessary to accommodate proper closure, must be described in a narrative form with the closure certification statements. The Permittee shall describe the rationale for implementing minor changes as part of this narrative report.

II.J.(4) The Permittee shall notify the Agency at least forty-five (45) calendar days prior to the date it expects to begin closure of the container storage areas.

II.J.(5) The Permittee shall certify in accordance with I.N. that the HWMA and each area of the hazardous waste management unit has been closed in accordance with the applicable specifications in the Closure Plan, Attachment 8 of this permit within sixty (60) days of completion of closure.

II.K. Cost Estimate for Container Storage Area Closures

II.K.(1) The Permittee shall comply with the requirements of 40 CFR § 264.142(a). The Permittee shall maintain a current closure cost estimate as included in Attachment 9 for final closure of the container storage areas.

II.K.(2) The Permittee shall adjust the closure cost estimate for inflation on an annual basis within thirty (30) days after the close of the Permittee's fiscal year, in accordance with 40 CFR § 264.142(b).

- II.K.(3) During the active life of the storage facility, the Permittee shall submit a revised closure cost estimate to the Administrator within thirty (30) days of the submission of a modification of the closure plan, if such modification results in an increase in the closure cost estimate, in accordance with 40 CFR § 264.142(c).
- II.K.(4) Prior to placement of waste in any new container storage area, the Permittee must amend, as necessary, the summary of current closure costs to reflect the estimated closure cost of that new unit. Such amended closure costs shall be annually adjusted for inflation, as required by 40 CFR § 264.142(b) and II.K.(2).
- II.K.(5) Upon closure certification of any container storage area, in accordance with 40 CFR § 264.115, and after the Administrator has released the Permittee from the financial responsibility requirements for that unit, the Permittee may adjust the summary of current closure costs to reflect the closure cost of that unit. The Permittee shall submit a current version of the closure cost estimate, indicating cost estimates for each remaining unit to be closed, to the Administrator, along with the closure certification statements for each closed unit.

II.L. Financial Assurance for Container Storage Area Closure

- II.L.(1) The Permittee shall comply with 40 CFR § 264.143 by providing documentation of financial assurance, as required by 40 CFR § 264.151 in the amount of the cost estimates required by permit condition II.K.(1).

II.L.(2) Prior to placement of waste in any new container storage area, the Permittee shall update the closure financial assurance mechanism, as necessary, and demonstrate that an adequately funded financial assurance mechanism for closure, including the new unit, is in effect. A copy of the updated financial assurance mechanism shall be submitted to the Administrator before waste is placed in the new unit.

II.L.(3) Changes in financial assurance mechanisms must be approved by the Administrator pursuant to 40 CFR § 264.143.

II.M. Liability Requirements

The Permittee shall comply with the requirements of 40 CFR § 264.147(a), and the documentation requirements of 40 CFR § 264.151, including the requirements to have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs.

II.N. Incapacity of Owners or Operators Guarantors, or Financial Institutions

The Permittee shall comply with 40 CFR § 264.148 whenever necessary.

II.O. Corrective Action/Interim Measures Cost Estimate

II.O.(1) Within thirty (30) calendar days of the Administrator's acceptance or modification of any Corrective Action/Interim Measure plan, the Permittee shall submit to the Administrator an updated detailed estimate of the capital, operating, and monitoring costs for the Corrective Action/Interim Measures.

- II.O.(2) Within thirty (30) calendar days of the Administrator's acceptance or modification of the closure plans for a Corrective Action/Interim Measure, the Permittee shall submit to the Administrator, a detailed estimate of the costs for implementing the closure plan.
- II.O.(3) The Permittee shall adjust the cost estimates for inflation within thirty (30) days after the close of the Permittee's fiscal year.
- II.O.(4) Upon completion of the physical construction of the Corrective Action/Interim Measure, the Permittee may adjust the costs to reflect the expenditure up to the projected capital costs included in the plan submitted in accordance with permit condition II.O.(1).
- II.O.(5) The Permittee shall submit a revised cost estimate for Corrective Action/Interim Measures and for the closure of the Corrective Action/Interim Measures to the Administrator within thirty (30) days of an accepted modification of the Corrective Action/Interim Measure plans which would increase the cost of closure.
- II.O.(6) During the operation of the Corrective Action/Interim Measures Program, the Permittee shall keep a copy of the latest cost estimate and adjustments made in accordance with permit conditions II.O.(3), II.O.(4), and II.O.(5).

II.P. Corrective Action/Interim Measures Financial Assurance

The Permittee shall establish and maintain financial assurance by one of the forms provided for under 40 CFR §264.143 in the amount of the cost estimates required by permit condition II.O. The Permittee shall provide the Administrator documentation of this financial assurance within sixty (60) calendar days of the Permittee's submittal of the cost estimates in accordance with permit condition II.O.

II.Q. Partial/Post-Closure

II.Q.(1) Performance Standard In the event that each of the areas of the hazardous waste management unit have closed and the Hazardous Waste Management Area cannot be closed in accordance with the requirements of II.J because wastes remains in place above the clean-up levels, the Permittee must cover the area and operate under partial/post-closure. The Permittee shall operate and maintain the the facility as required by 40 CFR § 264.118 and in accordance with the Partial/Post-Closure Plan which is described in II.Q.(4).

II.Q.(2) Partial/Post-Closure Period The period of partial/post-closure care for the facility shall be a minimum of thirty (30) years, to commence on the date closure certification is accepted by the Agency. The partial/post-closure care period will be extended until three (3) years after the corrective action monitoring period if groundwater treatment continues for more than twenty-seven (27) years. The Administrator can extend the partial/post-closure period, if necessary, to protect human health or the environment.

II.Q.(3) Partial/Post-Closure Property Use Partial/post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), interceptor drain, or any other components of the containment system, or the function of the facility's monitoring systems, unless the Administrator find that the disturbance:

- a. Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or
- b. Is necessary to reduce a threat to human health or the environment.

II.Q.(4) The Partial/Post-Closure Plan includes:

- a. Security Provisions described in Attachment 3;
- b. Those Inspections and Maintenance Activities described in Attachment 4 or developed pursuant to this permit that are necessary to:
 - i. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;
 - ii. Maintain the security of the facility;
 - iii. Maintain and monitor the groundwater monitoring system;
 - iv. Prevent run-on and run-off from eroding or otherwise damaging the final cover; and,
 - v. Protect and maintain surveyed benchmarks used in complying with § 264.309.
- c. Training Plan described in Attachment 5;
- d. Program to Prevent Hazards described in Attachment 6;
- e. Contingency Plan described in Attachment 7; and,
- f. Groundwater Monitoring Program described in Section V of this permit.

II.Q.(5) Partial/Post-Closure Certification of Completion No later than sixty (60) days after completion of partial/post-closure for the hazardous waste management facility, the Permittee must submit to the Administrator, by registered mail, a certification that the partial/post-closure care period for the hazardous waste management area was performed in accordance with the specifications in the approved partial/post-closure plan. The certification must be signed by the Permittee and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Administrator upon request until they release the Permittee from the financial assurance requirements for partial/post-closure care under § 264.145(i).

II.R. Cost Estimate for Facility Partial/Post-Closure

The Permittee's most current partial/post-closure cost estimate, including corrective action costs, prepared in accordance with 40 CFR § 264.144(a), is provided in Attachment 9.

II.R.(1) The Permittee shall adjust the partial/post-closure cost estimate for inflation within thirty (30) days after the close of the Permittee's fiscal year.

II.R.(2) The Permittee must revise the post-closure cost estimate within 30 days after approval by the Administrator of a modification of the partial/post-closure plan which will affect the cost.

II.R.(3) The Permittee must keep at the facility the latest partial/post-closure cost estimate as required by 40 CFR § 264.144(d).

II.R.(4) The partial/post-closure cost estimate is included in the permit for informational purposes only and any such revisions to that cost estimate shall not be considered a major modification of the permit.

II.S. Financial Assurance for Facility Post-Closure

The Permittee shall demonstrate continuous compliance with 40 CFR § 264.145 by providing documentation for financial assurance, as described by 40 CFR § 264.151, in at least the amount of the cost estimates required by Part II.R. Changes in financial assurance mechanisms must be approved by the Administrator pursuant to 40 CFR § 264.143 and § 264.149.

II.T. Equivalent Materials

If certain equipment, materials, and administrative information (such as names, phone numbers, addresses) are specified in this permit, the Permittee is allowed to use an equivalent. Use of such equivalent items shall not be considered a modification of the permit but the Permittee must place in the operating record such a revision, accompanied by a narrative explanation, and the date the revision became effective. The Agency may judge the soundness of the equivalency determination during inspections of the facility and take appropriate action.

II.U. Dispute Resolution

II.U.(1) In the event the Administrator rejects, in whole or in part, any plan or schedule required by this permit, and for which the acceptance of this plan or schedule as specified in this permit does not require a permit modification under 40 CFR §270.41, the following procedures will be followed:

(a) The Administrator will notify the Permittee in writing of the proposed modification to the plan, schedule or report. Such notice will:

(i) Describe the exact change(s) to be made to the plan or schedule;

- (ii) Provide an explanation and supporting documentation or data of why the modification is needed; and,
 - (iii) Provide notification of the date by which comments on the proposed modification must be received from the Permittee. Such date will not be less than twenty days from the date of the Permittee's receipt of the notice under permit condition II.U.(1)(a).
- (b) If the Administrator receives no written comments on the proposed modification from the Permittee, the modification will become effective five (5) calendar days after the close of the comment period specified under permit condition II.U.(1)(a)(iii). The Administrator will promptly notify the Permittee that the modification has become effective.
- (c) If the Permittee submits written comments on the proposed modification, the Administrator shall make a final determination concerning the modification within thirty (30) calendar days after the end of the comment period, if practicable. The Administrator shall then notify the Permittee in writing of the final decision. Such notification shall:
- (i) Indicate the effective date of the modification, which shall be no later than fifteen (15) calendar days after the date of notification of the final modification decision;
 - (ii) Include an explanation of how comments were considered in developing the final modification; and,
 - (iii) Provide a copy of the final modification.

II.U.(2) Modifications initiated and finalized by the Administrator using procedures in permit condition II.U.(1) are not subject to administrative appeal.

PART III - CONTAINER STORAGE

III.A. Design and Operation

- III.A.(1)(a) In storage Unit No. 4, the Permittee may store any containerized wastes listed on the Part A permit application, included as Attachment 11 of this permit.
- III.A.(1)(b) In storage Units No. 51 and No. 32, the Permittee may store compatible containerized wastes as described in Attachment 12 of this permit, except as modified by this permit.
- III.A.(1)(c) Storage Unit No. 51 shall be constructed as described in Attachment 12 of this permit. The Permittee shall submit all final as-built drawings and narrative reports in accordance with permit condition II.A.
- III.A.(2) The quantity of containerized waste stored in each designated storage unit shall be limited by the design capacity of that unit, as specified in "Container Storage", included as Attachment 12 of this permit.
- III.A.(3) The Permittee shall store containerized waste in the manner described in Attachment 12 of this permit, except as otherwise specified in this section of the permit.
- III.A.(4) The Permittee shall be allowed to store or treat hazardous waste in containers in accordance with 40 CFR §262.34.

III.B. Inspections

The Permittee may store all containers of RCRA waste on pallets stacked two containers high, in accordance with Attachment 12 of this permit, provided the stacks are stable and there is no apparent hazard of such containers tipping or falling and provided that inspection of such containers is not inhibited. The Permittee shall, immediately upon request from the Administrator, reposition any container, as necessary, to make the label on that container visible for the purpose of inspection.

III.C. Aisle Space

The Permittee shall maintain a minimum of three (3) feet of aisle space at all container storage units at the facility. Maintenance of the specified aisle space shall constitute compliance with 40 CFR § 264.35.

III.D. Containment

III.D.(1) The Permittee shall store all containerized wastes in Storage Units No. 51, No. 4, and No. 32 on pallets, or equivalent apparatus, so that containers do not come in contact with the base during storage. The Permittee shall store containers in a manner that minimizes the potential for container deterioration.

III.D.(2) The Permittee shall store ignitable wastes only in the ignitable storage area (Unit No. 4) in accordance with Attachment 12.

PART IV - CORRECTIVE ACTION/INTERIM MEASURES

IV.A. Interim Measures

IV.A.(1) The Permittee shall implement interim measures to minimize future releases to the environment until such time that final corrective action is accepted by the Agency and implemented by the Permittee. The referenced figures and schedule are in Attachment 13. Compliance with this item shall require interim measures including:

- (a) a cover and grading to prevent off-site migration of hazardous constituents through surface water, reduce infiltration to groundwater, and to prevent run-on of surface water from off-site;
- (b) an interceptor drain as shown in Figures 2-1, 2-3, and 2-4;
- (c) pumping of contaminated groundwater from extraction wells as shown in Figures 3-9 and 3-10 located in the intermediate aquifer for the capture zones as shown in Figures 3-1, 3-6, 3-7, 3-8; and
- (d) treating of contaminated water in an on-site totally enclosed water treatment plant at least as effective as the systems described in Table 5-2 and Figure 5-2.

The interim measures shall be designed (and the designs submitted to the Agency), and installed in accordance with the Interim Corrective Action Plan Schedule (Figure 8-2) included in Attachment 13 of this permit as modified by this permit. The figures and attachments referenced in Attachment 13 shall be considered preliminary designs and only minor changes will be accepted in the final designs. Final plans submitted pursuant to this condition shall be considered minor permit modifications.

IV.A.(2) The interim measures shall be taken on the Hazardous Waste Management Area (HWMA). The HWMA is the contiguous area within the facility internal to the interceptor drain designated for the purpose of implementing corrective action requirements. This area is identified by Reichhold in Figure S-1 of Attachment 1, but will also include the area indicated in Figure S1-A.

The hazardous waste management unit of the hazardous waste management area (HWMA) includes the wastewater treatment ponds area, the construction debris/sludge disposal area, the resin tank farm area, and the former pentachlorophenol plant area.

The interceptor drain shall be expanded to include the areas included under the definition of a HWMA. If an easement cannot be obtained or if the Permittee determines an on-site drain system is more appropriate, the shallow interceptor drain shall be moved inside the Reichhold property as close as possible to the Reichhold property line. If such movement is required or an equivalent system must be installed in the area near the treated fiber plant, it shall be deemed a minor design change pursuant to Condition II.A.

IV.A.(3) Interim Measures Development The Permittee shall conduct tests including those outlined on pages 2-13, 14, 15, 16 and Figure 2-5 of Attachment 13 and any additional tests (e.g., soil tests, groundwater models, pilot programs, etc.) necessary to develop the hydrogeologic, chemical, and operational parameters to demonstrate the groundwater extraction system's ability to meet the requirements under permit condition V.C.(1)(f) and to provide the supporting data for the design and operation of the groundwater treatment system to meet the requirements under permit condition V.C.(1)(f) in accordance with the schedule in Attachment 13 of this permit. The details for conducting the test(s) shall be included in the plans required under the schedule contained in Attachment 13.

IV.A.(4) Groundwater Extraction Systems Final plans for the groundwater extraction systems designated in permit condition IV.A.(1) shall be prepared by the Permittee and submitted to the Administrator for acceptance, rejection, or modification in accordance with the schedule contained in Attachment 13. Such acceptance, rejection, or modification shall not require a permit modification under 40 CFR §270.41. The Permittee shall implement the accepted final plans in accordance with the schedule contained in Attachment 13 of this permit. The groundwater extraction systems shall be designed to operate continually twenty-four (24) hours a day except for emergencies. The Agency must be contacted if the extraction system will not be meeting the performance standards. Operational shutdowns of as short a duration as possible will be performed with the intent of continually meeting the system performance standards.

IV.A.(5) Water Treatment Plant

(a) The Permittee shall design, construct, operate, and maintain a water treatment system such as those conceptually described in IV.A.(1) of this permit. The water treatment plant shall have an adequate capacity and flexibility to treat the contaminated groundwater from the groundwater extraction system specified in permit condition IV.A.(4) to meet all applicable local, state, and federal regulatory requirements for permitting the groundwater treatment system and its discharges in accordance with the schedule in Attachment 13 of this permit.

- i. All groundwater from the site shall be managed as a hazardous waste unless all inorganic and organic constituents are below the Groundwater Protection Standards as defined in Table 7 on page 70 of this permit or managed in accordance with 270.1(c)(2)(iv).
- ii. Residues removed from the groundwater during on-site treatment shall be handled as listed hazardous waste.

(b) Corrective Action For Contaminated Groundwater Program Closure

Within ninety (90) calendar days after the completion of the final design, the Permittee shall submit to the Administrator, closure plans for the groundwater extraction systems, the interceptor drain, and the groundwater monitoring system (these three systems together hereafter called the Corrective Action for Contaminated Groundwater Program). The Permittee shall submit a closure plan as a minor permit modification request in accordance with 40 CFR §270.42. The closure plan should include detailed procedures and a schedule for the disposal or decontamination of all elements of these systems. The Agency will accept, reject, or modify the closure plans. Plans submitted pursuant to this condition shall be considered minor permit modifications.

IV.A.(6) Interim Measures Schedule The Permittee shall implement the Interim Measures in accordance with the calendar schedule provided as Figure 8-2 of Attachment 13 of this Permit, and in accordance with all revisions required by the Permit.

- (a) The calendar schedule shall be revised to allow a maximum of five (5) months for the preliminary and final designs of the capping and surface water drainage in accordance with Section 6, Attachment 13 of this Permit.
- (b) The calendar schedule (Figure 8-2 of Attachment 13) shall be revised to allow a maximum of four (4) months after the effective date of the permit for the preliminary and final designs of the shallow interceptor trench.
- (c) **Within thirty (30) days after the effective date of this permit,** the Permittee shall submit a revised calendar schedule for interim measures in accordance with Attachment 13. The revisions shall incorporate only changes resulting from permit conditions IV.A.(6) (a) and (b) and the effective date of this permit.

IV.A.(7) Interim Measures Record keeping and Reporting Requirements Within fifteen (15) months after the effective date of this permit, and annually thereafter, the Permittee shall submit a report summarizing the effects of the interim measures. This report shall include:

- (a) groundwater progress reports including the demonstrations required under condition V.C.(1)(f), groundwater flow maps, and summary of groundwater analyses to date;
- (b) summaries of maintenance activities;
- (c) summaries of inspection results;
- (d) summaries of all records of the interim measures activities (including any cessation of pumping and treating and measures taken to mitigate and prevent further cessations,); and,
- (e) progress reports on construction activities or a certification of completion of construction of interim measures in accordance with accepted plans by a registered independent professional engineer including as built drawings and any modifications of plans due to as built and/or notifications of changes in monitoring and/or operating status.
- (e) The Permittee shall maintain as part of the operating record, a log book of all maintenance activities including any cessation of pumping and treating, and measures taken to mitigate and prevent further cessations.

IV.A.(8) Cover Performance Standard The cover shall be designed to prevent off-site migration of hazardous constituents through surface water and groundwater, and to prevent run-on of surface water from off-site. Portions of the HWMA may be left uncovered to conduct in-situ treatability studies. Special measures must be taken to prevent migration of contamination from these areas. **Within 180 days of the effective date of the permit, the Permittee shall submit a map, to be deemed a minor modification, showing existing engineered roadways and those to be installed.** Vehicular traffic shall be banned except on roads designed as roadways. These roadways shall have open access, but all other covered areas must be fenced off to prevent vehicular traffic.

IV.A.(9) Interim Measures Inspection and Maintenance

- (a) The Permittee shall inspect the interim cover monthly over the areas of the hazardous waste management unit and annually over the rest of the HWMA and immediately repair any cracks or deterioration. Records of these inspections shall be maintained as part of the operating record.
- (b) **Within thirty (30) days of the effective date of this permit, the** Permittee shall provide a maintenance plan that describes procedures for the repair of items inspected during the interim measure period.

IV.B. Final Corrective Action for Soil

IV.B.(1) Final Corrective Action Soil Clean-up Standards

The clean-up standards for soil shall be the background level to be established for the inorganics by the Agency based on composite soil sampling data obtained from similar geologic strata in on-site areas not affected by operations.

For inorganics not naturally occurring in the on-site soil level and for organics, the clean-up standard shall be the health based standard for soil identified in the Draft RCRA Facility Investigation Guidance Document (Attachment 20), or the Practical Quantitation Limit (PQL) for the constituents as defined in SW-846, if no health based level is available or the health based level or MCL is below the PQL. Current applicable Agency guidelines and standards for protection of human health and the environment may be used at the time the Permittee is conducting clean-up to determine clean-up standards.

IV.B.(2) Septic Tank and Unit 50 Within one hundred twenty (120) days of the effective date of this permit, a plan shall be provided for the characterization and removal of contaminated soils associated with the septic tank and Unit 50. The plan shall include a proposed sampling plan and testing program to assure that the soil has been removed to clean-up standards within three hundred sixty (360) days of the effective date of this permit. The Agency will review and accept, modify, or disapprove the plan. Plans submitted pursuant to this condition shall be considered minor permit modifications.

IV.B.(3) Drum Search Within one hundred twenty (120) days after the effective date of this permit, the Permittee shall complete a study of the drum burial areas as outlined in Attachment 14. The study shall be expanded to include the areas indicated near the north extension area on the aerial photos dated 7-13-73 and 7-13-74 included in Attachment 1. The study report shall include a plan and schedule to remove any drums found within three hundred sixty (360) days of the effective date of this permit. The Agency will review and accept, modify, or disapprove the report. Plans submitted pursuant to this condition shall be considered minor permit modifications.

- IV.B.(4) Off-site Soil and Sediment Investigation** Within one hundred twenty (120) days after the effective date of this permit, the Permittee shall complete the off-site investigation outlined in Attachment 15. The study report shall include a plan and schedule to characterize the full extent of any off-site contamination found during this investigation and a plan to remediate any contamination (hazardous constituents of Appendix VIII above the soil clean-up standard) found within three hundred and sixty (360) days of the effective date of this permit. The Agency will review and accept, modify, or disapprove the report. Plans submitted pursuant to this condition shall be considered minor permit modifications.
- IV.B.(5) Final Corrective Measures for Soil Treatability Study** Within one hundred eighty days (180) days after the effective date of this permit, the Permittee shall submit a report identifying the feasibility and expected costs of each corrective action technology identified in Table 1-1 of the Interim Corrective Action Plan with the addition of white rot fungus and in situ vitrification (Attachment 13 of this permit). This report shall include a proposed schedule for completing a pilot scale treatability study within two (2) years after the effective date of this permit. This treatability study shall be designed to reduce the hazardous constituents to below the clean-up standards. The Agency will review and accept, modify, or disapprove the report. Feasibility, pilot scale and treatability study plans submitted pursuant to this condition shall be considered minor permit modifications. When a final corrective action plan for soil is developed it will be a major permit modification.

IV.B.(6) Further Investigation and/or Corrective Action If it is determined by the Administrator pursuant to investigations conducted pursuant to this permit, that additional corrective action by the Permittee is required to protect human health and the environment from releases from the facility, the Permittee shall submit a plan and implementation schedule to the Administrator within sixty (60) calendar days of the Permittee's receipt of a written request by certified mail for this corrective action plan and schedule from the Administrator. The plan shall be accepted, modified or disapproved by the Agency. The corrective action plan and schedule shall be submitted in accordance with 40 CFR §270.41.

IV.C. Access and Information

To the extent that work required by this permit must be done on property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain site access agreements from the present owner(s) of such property no later than two weeks prior to the scheduled commencement of work. Best efforts shall mean, at a minimum, a certified letter from the Permittee to the current property owner(s) requesting access to such property and if a reply is received from the property owner, follow-up letters from the Permittee, as appropriate, to clarify the work contemplated and address the owner's reasonable concerns. The Agency may assist the Permittee in obtaining such agreements. If pursuant to this permit, the Permittee conducts sampling and analysis on property not owned or controlled by the Permittee and discovers contaminated groundwater or soil, the Permittee shall inform the property owner and/or operator within thirty (30) days of such discovery by certified mail. A copy of this letter shall be kept in the operating record.

IV.D. Other Permits And/Or Approvals

To the extent that work required by this permit must be done under a permit(s) and/or approval(s) pursuant to other regulatory authorities, the Permittee shall use its best efforts to obtain such permits. For the purposes of this permit condition "best efforts" shall mean submittal of a complete application for the permit(s) and/or approval(s) at the earliest opportunity after the information necessary to prepare the application is available to the Permittee.

IV.E. Schedule Extensions

To the extent that activities required by this permit are not completed in accordance with the schedules of this permit, and the Permittee can demonstrate to the Administrator's satisfaction that the Permittee used best efforts to accomplish the activity within the required schedule, the Administrator shall grant the Permittee an extension to the schedule.

For the purposes of this permit condition "best efforts" shall include performance of all activities necessary to award contract(s) to outside contractors at the earliest opportunity after the information necessary to award the contract(s) is available to the Permittee, adequate planning, adequate funding, adequate operator staffing, adequate laboratory and process controls, operation of a backup or auxiliary facility or similar systems by the Permittee when necessary to meet the schedules of this permit. The Permittee shall notify the Agency, in writing, as soon as possible of any deviations or expected deviations from the schedules of this permit. The Permittee shall include with the notification information to support that the Permittee has used its best efforts to meet the schedules of this permit. If the Administrator determines that the Permittee has made best efforts to meet the schedules of this permit, the Administrator shall notify the Permittee in writing by certified mail that the Permittee has been granted an extension and provide the Permittee a revised schedule reflecting this extension. Such a revision shall not require a permit modification under 40 CFR §270.41.

PART V - GROUNDWATER MONITORING PROGRAM

V.A. Assessment Monitoring Plan Within ninety (90) days of the effective date of the permit, the Permittee shall implement Attachment 19 of this permit incorporating the following modifications:

- V.A.(1) Inspection of drilling and well construction shall be performed by a qualified geologist. The geologist shall construct and maintain a detailed log of each well describing the geologic strata encountered during drilling. The logs or descriptions shall include:
- (a) Date and time of construction;
 - (b) Drilling method and any fluid used;
 - (c) Well location (surveyed to within 0.5 feet);
 - (d) Borehole diameter and well casing diameter;
 - (e) Well depth (to within 0.1 feet);
 - (f) Drilling logs and lithologic logs, including a description of soil or rock types, color, petrology, weathering, texture, structure, and fractures;
 - (g) Casing materials;
 - (h) Screen material and design, including screen length and slot size;
 - (i) Casing and screen joint type;
 - (j) Filter pack material, including size and placement method, and approximate volume;
 - (k) Composition and approximate volume of sealant material and method of placement;
 - (l) Surface seal design and construction;
 - (m) Well development procedures;
 - (n) Ground surface elevation (to within 0.01 feet);
 - (o) Top of casing elevation (to within 0.01 feet); and,
 - (p) Detailed drawing of well, including dimensions.

Within sixty (60) calendar days after completion of that well or the effective date of the permit whichever is later, the logs and description will be included in the operating record and be submitted with the annual report.

- V.A.(2) All reasonable precautions shall be taken during drilling which may be necessary to prevent potential cross contamination between different zones.
- V.A.(3) If contamination is detected in any new wells, the Permittee shall determine the full extent of the contaminant plume. Any additional wells needed to determine the full extent of the contaminant plume must be installed within ninety (90) days of discovering the contamination (hazardous constituents of Appendix VIII above the Groundwater Protection Standard, Table 7 page 70 of this permit).

V.B. Pre-Corrective Action Monitoring Program Within sixty (60) days of the effective date of the permit, the Permittee shall implement the pre-corrective action monitoring program. The Permittee shall continue the pre-corrective action groundwater monitoring program until the corrective action monitoring program outlined in permit condition V.C. starts. The Permittee shall implement the pre-corrective action monitoring program described as follows.

V.B.(1) Well Location The Permittee shall install all the monitoring wells listed on Tables 1 through 4 (Pre-corrective Action Monitoring Program Tables located on pages 64 through 67 of this permit) of this permit as located on Figures B of Attachment 13 of this permit.

V.B.(2) Well Installation and Development All wells installed during the pre-corrective action program, the corrective action program, and the post-closure period shall be installed and developed in accordance with Attachment 18 of this permit, as modified by this permit. Development shall proceed until the well is fully developed and capable of providing samples which are representative of ambient groundwater conditions.

V.B.(3) Water Level Monitoring and Groundwater Flow Map

(a) Water level elevations shall be taken every time a well is sampled in accordance with Attachment 17.

(b) During the pre-corrective action monitoring period, the Permittee shall obtain water level elevations for the intermediate and deep aquifer wells listed in Table 4 (page 67 of this permit) once in a dry season and once in a wet season for both a high tide and a low tide in accordance with the methods described in Attachment 17 of this permit. Water level measurements shall be taken of all wells within an aquifer within 30 minutes (+ or -) of the low or high tide for water level maps. The measurements shall be taken within seven (7) calendar days prior to any purging or sampling events.

The low tide measurements and high tide measurements do not have to be taken on the same calendar day. Wells within a cluster must be taken within five minutes of each other so that the heads can be compared.

- (c) The Permittee shall use these data to determine the rate and direction of groundwater flow and to construct water table elevation contour maps for each aquifer annually. These maps shall be submitted to the Administrator within ninety (90) calendar days of the Permittee's receipt of the fourth quarter of quality assured analytical results from the laboratory. Additionally, the Permittee shall submit, with the contour maps, a written review of the adequacy of the groundwater monitoring system relative to observed groundwater flow directions and a written review of the adequacy of the groundwater sampling program to detect groundwater contamination originating from Reichhold activities.

V.B.(4) Water Quality Monitoring The pre-corrective action sampling shall include all the wells in Tables 1, 2, and 3 (pages 64, 65 and 66 of this permit) at the frequencies indicated. The most contaminated well (based on total organics) shall be sampled for Appendix IX annually. All other wells shall be sampled for Table 6 (page 69 of this permit) annually, and for Table 5 (page 68 of this permit) for other sampling episodes.

During the initial sampling event only, the wells in Table 1 (page 64) indicated for quarterly sampling shall be sampled for all Appendix IX plus molybdenum and formaldehyde. All other wells shall be sampled for Table 6 (page 69).

Samples taken during the pre-corrective action monitoring program, the corrective action monitoring program, and the detection monitoring program shall be taken in accordance with the procedures in Attachment 17 of this permit as modified as follows.

- (i) Monitoring wells will be purged and sampled with either a dedicated Teflon bladder pump or a stainless steel Teflon check valve bailer. It shall be recorded on the sampling record whether an immiscible, floating and/or sinking layer are observed during the sampling or well purging episode.
- (ii) The Permittee shall purge all high yield monitoring wells (greater than 5 gpm for a 24 hour period) from as near to the top of the well screen as possible, and all low yield monitoring wells from as near to the bottom of the well as possible (allowing for equipment constraints) when using purge pumps.
- (iii) Future changes to the sampling and analysis techniques of SW-846 or other RCRA groundwater sampling and analysis documents may be incorporated by following the procedures of II.T.
- (iv) Each sample collected for analysis of volatile organic constituents shall be collected as soon as possible after purging the monitoring well. Recovery of up to three (3) feet of water in the well, after final purging, shall be deemed to be an adequate volume for collection of the volatile organic sample.
- (v) Analytical methods shall be as specified in the EPA Test Methods for Evaluating Solid Waste, SW-846 (for the purpose of this permit, the NIOSH method shall be an acceptable method for formaldehyde until an EPA method for formaldehyde is approved). Formaldehyde samples will be sampled (including storage and handling procedures) in accordance with the proper quality assurance procedures for a volatile organic. All data shall be quality assured and quality controlled in accordance with SW-846 procedures and the Guidance Document for Assessment of RCRA Environmental Data Quality (Attachment 21).

- V.B.(5) Sample Analysis The Permittee shall submit to the Administrator within forty-five (45) calendar days of the Permittee's receipt of quality assured results from the laboratory, but in no case shall the period between the date of sampling and the date of submission of the quality assured analytical results to the Administrator exceed 120 calendar days.
- V.B.(6) Data Evaluation and Follow Up Actions The Permittee shall evaluate the groundwater analytical data obtained under the pre-corrective monitoring program as follows:
- (a) As soon as four sequential quarters of quality assured organics groundwater monitoring data is available for a well (including any groundwater monitoring prior to permit issuance), the Permittee shall take the results obtained from the first four groundwater monitoring events, and determine the total concentration of organics detected for each well for each quarterly event, and shall determine the average concentration of organics detected for each well. The value for constituents not detected shall be half of the detection limit. The results of the total organics analysis and the averages shall be submitted to the Administrator within ninety (90) calendar days of the Permittee's receipt of the fourth quarter of quality assured analytical results from the laboratory, or within (90) days of permit issuance whichever is earlier.
 - (b) Under all subsequent quarterly pre-corrective action monitoring evaluations, the Permittee shall compare the total concentration of organics detected in each well to the average total concentration of organics for each well determined in the first evaluation under permit condition V.B.(6)(a) and determine whether the total organic concentration of any well has significantly increased, within ninety (90) calendar days of the Permittee's receipt of quality assured analytical results from the laboratory. For the purposes of this permit condition, "significantly increased" is defined as total organic concentration in any well being greater than 100% above the average determined condition V.B.(6)(a).

(c) Within thirty (30) calendar days of the Permittee's determination that the total organic concentration at any well exceeded the criteria in permit condition V.B.(6)(b), the Permittee shall submit to the Administrator either of the following:

- i. Notification of this determination and notification that the groundwater extraction system and the groundwater treatment system shall be fully operational pursuant to permit condition IV.A.(4) and IV.A.(5) within thirty (30) calendar days of this notification; or,
- ii. Notification of this determination and notification of revisions to the interim measures/corrective action schedule of this permit reflecting the implementation by the Permittee of all best efforts to accelerate the start-up of the groundwater extraction system and groundwater treatment system.

(d) If contamination (hazardous constituents of Appendix VIII above the Groundwater Protection Standard, Table 7 page 70 of this permit) is detected in the shallow aquifer off-site, a plan for a groundwater capture system for the shallow aquifer must be submitted to the Administrator by the Permittee within sixty (60) calendar days of detection.

(e) The Permittee shall create a composite list of all Appendix IX constituents found during all the sampling programs at the site (including pre-corrective action sampling and the sampling programs prior to permit issuance) plus formaldehyde and molybdenum for the operating record, and submit this with the annual report.

V.B.(7) Well and Piezometer Maintenance

- (a) The Permittee shall maintain all monitoring wells, piezometers, and test wells in good working order, making necessary repairs in a timely manner throughout the pre-corrective measure, the corrective measure, and the detection monitoring programs, so that the sampling programs are not significantly hindered or delayed in any way. The Permittee shall maintain an adequate supply of replacement parts and repair equipment to ensure that each sampling event proceeds on schedule.
- (b) The Permittee shall sound each well and piezometer on an annual basis throughout the pre-corrective measure, the corrective measure, and the detection monitoring programs, beginning with the first sampling event after the effective date of this permit. The Permittee shall redevelop any such well which is determined at the annual sampling to have accumulated silt or sediment in excess of one foot of depth or if the yield from a well or piezometer is noted to have significantly decreased or recovery time has significantly increased, indicating clogging of the screen and/or sand filter.

V.B.(8) Well and Piezometer Replacement If a well or piezometer must be replaced for any reason during the pre-corrective measure, the Interim Measures/Corrective Action, and the detection monitoring programs, the Permittee shall install the replacement well or piezometer as close as practicable to the well or piezometer being replaced in accordance with Attachment 18 of this permit within ninety (90) calendar days of the date taken out of service. The Permittee shall close any well being replaced within ninety (90) calendar days of the installation of the replacement well. Wells and piezometers closed during the pre-corrective measure and the Interim Measures/Corrective Action programs, shall be closed by pulling the casing, redrilling the hole out, and grouting to the land surface using a tremie pipe. The grout used shall be a 4-5% Bentonite cement. Wells and piezometers to be closed after the completion of the Interim Measures/Corrective Action shall be closed with the applicable state or local abandonment procedures in effect at the time.

V.C. CORRECTIVE ACTION MONITORING PROGRAMS

V.C.(1) Corrective Action Monitoring Program The Permittee shall implement the corrective action monitoring program for the appropriate phase (on-site intermediate, off-site intermediate, and shallow aquifer) after completion of the installation of an an extraction system. Each phase of the program shall be implemented not more than ninety (90) days after the date of completion of the construction for that phase, and not more than ninety (90) days after a pre-corrective action monitoring sampling. The Permittee will continue corrective action monitoring for an area until the Groundwater Protection Standard (Table 7 page 70 of this permit) is met for at least one year in accordance with Condition V.C.(2). The Permittee shall implement the corrective action monitoring program described as follows.

(a) Well Location The Permittee shall install the wells as shown in Figure B of this permit in accordance with the procedures in Attachment 18.

(b) Water Level Monitoring and Groundwater Flow Map

(i) Water level elevations shall be taken every time a well is sampled in accordance with Attachment 17. Water level elevations shall also be taken for the piezometers and extraction wells.

(ii) The Permittee shall use these data to determine the rate and direction of groundwater flow and to construct water table elevation contour maps for each aquifer quarterly, to be submitted annually with the demonstration that the system performance criteria are being met.

(c) Water Quality Monitoring The Permittee shall obtain the groundwater samples during the corrective action monitoring program as in accordance with Attachment 17 as modified by this permit. All corrective action monitoring wells shall be sampled annually for the Table 6 (page 69 of this permit). The most contaminated well (based on total organics) will be sampled annually for Appendix IX.

(i) Shallow Wells A, B, W, 1, 2, 4, 5, 11, 12, 13, 14, 19, 34, 27, 42, 43, and any new off-site wells found during the groundwater assessment program to be contaminated shall be monitored:

1. Quarterly for Table 5 (page 68 of this permit) until the hydraulic barrier is shown to be effective pursuant to Condition V.C.(1)(f)(iii), and
2. Semi-annually for Table 5 (page 68 of this permit) after the hydraulic barrier is shown to be effective pursuant to Condition V.C.(1)(f)(iii).

(ii) Intermediate Wells 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 29, 30, 40, and any other newly installed well found to be contaminated with levels above the Groundwater Protection Standard (Table 7 on page 70 of this permit) during the pre-corrective action monitoring period shall be monitored:

1. Quarterly for Table 5 (page 68 of this permit) until the system performance standards outlined in Condition V.C.(1)(f)(iii) for the intermediate aquifer have been met.
2. Semi-annually for Table 5 (page 68 of this permit) after the system performance standards outlined in Condition V.C.(1)(f)(iii) for the intermediate aquifer have been met.

(iii) All Deep Aquifer Wells shall be monitored quarterly for

formaldehyde, molybdenum and any additional parameters found in the deep aquifer during the pre-corrective action sampling program above the Groundwater Protection Standard (Table 7 on page 70 of this permit), until either:

1. the intermediate aquifer wells meet the performance standards outlined in condition V.C.(1)(f)(iii) and an alternate deep aquifer monitoring plan has been approved, or
2. the deep Aquifer wells are below the Groundwater Protection Standards or an approved Alternate Concentration limit for four consecutive quarters, or
3. a deep aquifer clean up plan and alternate deep aquifer monitoring plan have been approved.

(iv) Within two years after the start of the intermediate extraction system, the Permittee must submit to the Administrator either a demonstration that the deep aquifer is being cleaned up by the corrective action in the upper aquifers, a request for an Alternate Concentration Limit, or a deep aquifer clean-up plan.

(e) Sample Analysis The Permittee shall analyze all samples obtained during the corrective action monitoring program in accordance with the procedures in Attachment 17 of this permit. Quality assured results of these analysis (including laboratory detection limits achieved for each parameter) shall be submitted to the Administrator within forty-five (45) calendar days of the Permittee's receipt of quality assured results from the laboratory, but in no case shall the period between the date of sampling and the date of submission of the quality assured analytical results to the Administrator exceed one hundred twenty (120) calendar days.

(f) Data Evaluation and Modifications to the Groundwater Corrective Action Plan

- (i) Groundwater Protection Standard Parameters analyzed pursuant to this permit shall be compared to the Groundwater Protection Standards in Table 7 (page 70). The basis for each Groundwater Protection Standard is shown in Table 7. The Groundwater Protection Standard for any Appendix IX constituent on the composite list developed during the pre-corrective action sampling program, not identified in Table 7 will be set at the background level to be established for the inorganics by the Agency based on water quality data obtained from on-site wells not affected by operations.

At least one background well and one year (minimum of four quarters) of monitoring data is necessary to establish background. Monitoring data must be used in full year increments to provide seasonal variations. The background value will be the mean plus three standard deviations (determined based on natural logarithmic values). The Agency will determine if a background value is an outlier.

For inorganics not naturally occurring in the groundwater and for organics, the Groundwater Protection Standard (Table 7) shall be a Maximum Contaminant Level (MCL) under the Safe Drinking Water regulations, or the health based standard for water identified in the Draft RCRA Facility Investigation Guidance Document (Attachment 20), or the Practical Quantitation Limit (PQL) for the constituents as defined in SW-846, if no health based level is available or the health based level or MCL is below the PQL. If a new or modified MCL is adopted after the effective date of the permit, then the modified MCL shall be used as a Groundwater Protection Standard (Table 7). If the MCL is higher than the background, the Agency will set the Groundwater Protection Standard (Table 7) at the MCL.

- (ii) Meeting the Groundwater Protection Standards Within fifteen (15) months of the completion of the construction of the interim corrective measures and annually thereafter, the Permittee must submit to the administrator either a demonstration that the operation of the corrective measure systems are in compliance with the objectives of containment and cleanup of contaminated groundwater, or a demonstration that all corrective action monitoring wells are below the Groundwater Protection Standard (Table 7). The demonstration that the operation of the corrective measure systems are in compliance with the objectives of containment and cleanup of contaminated groundwater must include a written description and supporting analytical and hydrogeologic data to demonstrate the performance effectiveness of the corrective measures.

This demonstration shall include graphical time trend analyses (including total organics) at each corrective action and groundwater monitoring well, plus other analyses deemed appropriate by the Permittee to evaluate progress toward meeting the Groundwater Protection Standards (Table 7).

If the Permittee cannot demonstrate that either the operation of the corrective measure systems are in compliance with the objectives of containment and clean-up of contaminated groundwater, or that the Groundwater Protection Standard (Table 7) is being met, a modification to the Groundwater Corrective Action Plan and a schedule for implementing will be requested by the Administrator within sixty (60) days of the receipt of the demonstration. The Permittee must submit the modification to the Groundwater Correction Action Plan designed to meet the Groundwater Protection Standard (Table 7) and a schedule for implementing within sixty (60) days of the Agency requests. The modification to the Plan must be implemented within thirty (30) days of Agency acceptance or modification. Demonstrations must be submitted annually until such time as the Groundwater Protection Standard (Table 7) is met. Plans submitted pursuant to this condition shall be considered minor permit modifications.

(iii) Meeting the System Performance Standards Within fifteen (15) months of the completion of the construction of the interim corrective measures and annually thereafter, the Permittee must submit to a demonstration that the following performance criteria are being met:

In the shallow aquifer:

1. Shallow interceptor drain maintains a water level lower than the surrounding groundwater table; and
2. Shallow aquifer flow lines are converging to the interceptor drain from the area beyond the drain and the area internal to the drain.

In the intermediate aquifer the groundwater extraction systems are:

3. Capable of recovering the groundwater both on-site and off-site, which has been adversely impacted by the releases from the facility;
4. Capable of preventing non-permitted discharges into the Blair Waterway and of reversing the gradient between the Blair Waterway and the off-site extraction system;
5. Capable of maintaining net groundwater flow from the deep to the intermediate within the influence of the intermediate groundwater system; and

The demonstration shall include but not be limited to flow maps, well cluster head comparisons, and other data equivalent or superior to the type of information obtained pursuant to Condition V.B.(3).

If the Permittee cannot demonstrate that the performance standards are being met or that the Groundwater Protection Standard (Table 7) is being met, a modification to the Groundwater Corrective Action Plan and a schedule for implementing will be requested by the Administrator within sixty (60) days of the receipt of the demonstration. The Permittee must submit the modification to the Groundwater Correction Action Plan designed to meet the performance standards and a schedule for implementing within sixty (60) days of the Agency requests. The modification to the Plan must be implemented within thirty (30) days of Agency acceptance or modification. Demonstrations must be submitted annually until such time as the performance standards are met. Plans submitted pursuant to this condition shall be considered minor permit modifications.

V.C.(2) Ceasing Pumping and Treating

- (a) Within thirty (30) days after the Permittee has determined that the Groundwater Protection Standard (Table 7) of this permit has been met for two (2) sequential monitoring episodes:
 - (i) for all monitoring wells in the shallow aquifer, or
 - (ii) for all monitoring wells within an extraction system (on-site system or off-site system) in the intermediate aquifer,

the Permittee shall notify the Administrator in writing that he intends to cease pumping and treating in that area and begin Detection Monitoring in that area after two additional sequential monitoring episodes, if the wells continue to be below the Groundwater Protection Standard (Table 7). The wells shall be sampled during the two additional sequential monitoring episodes for the composite list of all Appendix IX constituents plus formaldehyde and molybdenum developed pursuant to Condition V.B.(4).

- (b) During the first three years of the Detection Monitoring Period, the Permittee shall maintain the groundwater extraction system and the groundwater treatment system in readiness for restarting. The systems shall be operated semi-annually for three consecutive days to demonstrate readiness to restart. The operation period shall follow within one week after the groundwater sampling.
- (c) If any of the monitoring wells in the Detection Groundwater Monitoring Program are determined by the Permittee to exceed the Groundwater Protection Standards (Table 7) of this permit during the monitoring period, the Permittee shall:
 - (i) Notify the Administrator in writing within seven (7) days of receipt of the quality assured data that the corrective action program for groundwater including pumping and treating groundwater and the corrective action groundwater monitoring program will be restarted within ninety (90) days; if the Permittee is unable to successfully demonstrate that exceedance was caused by an off-site source or that the exceedance resulted from an error in sampling, analysis, or evaluation;
 - (ii) Immediately sample the groundwater in all wells reasonably expected to be affected (as designated by the Administrator) to determine the concentration of the Table 6; and,

- (iii) If the Permittee successfully demonstrates to the Agency that a source from off-site caused the exceedance or that the exceedance resulted from an error in sampling, analysis or evaluation, the Agency shall notify the Permittee to remain in or return to the Detection Monitoring Program.

V.D. Detection Monitoring Program

The Permittee shall implement the detection monitoring program at completion of the corrective action monitoring program for an area. The detection monitoring program for an area shall be the same as the corrective action groundwater monitoring program except:

- V.D.(1) The sampling frequency for the Table 5 (page 68 of this permit) constituents shall be quarterly for the first three years and semi-annually thereafter until either:
- (a) thirty (30) years has transpired with no exceedance of the Groundwater Protection Standard (Table 7), or
 - (b) three (3) years has transpired with no exceedance of the Groundwater Protection Standard (Table 7) and the Final Corrective Action for Soil is certified complete in accordance with I.N.
- V.D.(2) After an extraction system for a capture zone (as defined in Figure 3-1, 3-6, 3-7, 3-8, 3-9, and 3-10 of Attachment 13 or as further defined by the Agency during the groundwater corrective action program) is shut down, the Permittee shall sample the monitoring wells of that zone quarterly for three years for Table 5 (page 58 of this permit) constituents. If the Permittee remains below the Groundwater Protection Standard (Table 7) for three years of quarterly sampling after ceasing pumping and treating, the Permittee may cease sampling and analyses of the off-site wells in that zone.
- V.D.(3) Annual sampling for the Table 6 (page 69 of this permit) and Appendix IX shall be eliminated.

TABLE 1

PRE-CORRECTIVE ACTION MONITORING PROGRAM
Shallow Aquifer

<u>Well</u>	<u>Water Quality Monitoring Frequency</u>
1(S)	Semiannually
2(S)	Semiannually
4(S)	Quarterly
10(S)	Quarterly
12(S)	Quarterly
23(S)	Semiannually
25(S)	Semiannually
27(S)	Semiannually
32(S)	Quarterly
33(S)	Quarterly
34(S)	Semiannually
43(S)	Semiannually
51(S)	Quarterly
54(S)	Quarterly
55(S)	Semiannually
56(S)	Semiannually
57(S)	Quarterly
58(S)	Semiannually

TABLE 2

PRE-CORRECTIVE ACTION MONITORING PROGRAM
Intermediate Aquifer

<u>Well</u>	<u>Water Quality Monitoring Frequency</u>
2(I)	Quarterly
4(I)	Quarterly
12(I)	Quarterly
28(I)	Semiannually
29(I)	Quarterly
36(I)	Quarterly
37(I)	Quarterly
39(I)	Quarterly
41(I)	Quarterly
44(I)	Quarterly
45(I)	Quarterly
46(I)	Quarterly
48(I)	Quarterly
50(I)	Quarterly
53(I)	Quarterly
59(I)	Quarterly
58(I)	Semiannually

TABLE 3

PRE-CORRECTIVE ACTION MONITORING PROGRAM
Deep Aquifer

<u>Well</u>	<u>Water Quality Monitoring Frequency</u>
1(D)	Quarterly
4(D)	Quarterly
7(D)	Quarterly
10(D)(2)	Quarterly
11(D)(2)	Quarterly
13(D)	Quarterly
22(D)	Quarterly
40(D)	Quarterly
49(D)	Quarterly
53(D)	Quarterly
60(D)	Quarterly

TABLE 4

PRE-CORRECTIVE ACTION MONITORING PROGRAM
Wells for Quarterly Water Level Measurement

<u>Shallow Aquifer</u>	<u>Intermediate Aquifer</u>	<u>Deep Aquifer</u>
1(S)	1(I)	1(D)
2(S)	2(I)	4(D)
3(S)	3(I)	7(D)
4(S)	4(I)	10(D)
5(S)	5(I)	11(D)
6(S)	6(I)	13(D)
8(S)	7(I)	14(D)
9(S)	8(I)	53(D)
10(S)	9(I)	59(D)
11(S)	10(I)	50(D)
12(S)	11(I)	40(D)
13(S)	12(I)	22(D)
14(S)	13(I)	
15(S)	14(I)	
16(S)	15(I)	
19(S)	16(I)	
20(S)	18(I)	
22(S)	19(I)	
23(S)	20(I)	
24(S)	22(I)	
25(S)	28(I)	
26(S)	29(I)	
27(S)	30(I)	
32(S)	36(I)	
33(S)	37(I)	
34(S)	38(I)	
35(S)	39(I)	
42(S)	40(I)	
43(S)	41(I)	
57(S)	53(I)	
56(S)	59(I)	
54(S)	50(I)	
55(S)	46(I)	
51(S)	45(I)	
	44(I)	
	48(I)	

TABLE 5

GROUNDWATER MONITORING PARAMETERS

2,4-Dichlorophenol
Trans-1,2 dichloroethene
Trichloroethylene
Pentachlorophenol
Vinyl Chloride
Benzene
Trans-1,2-Dichloroethene
Trichloroethylene
2,3,4,6-Tetrachlorophenol
2,4,6-Trichlorophenol
2-Chlorophenol
2-Methylphenol
4-Chlorophenol 3 methylphenol
4-Methylphenol
4(1,1-Dimethylethyl)phenol
Di-n-Octylphthalate
P-tert-butyl phenol
Formaldehyde
Molybdenum

TABLE 6

MODIFIED APPENDIX IX
(Table E-26 from Application)

<u>Sample Parameter</u>	<u>EPA Method</u>
Organics	
Volatiles	
RAS list	8240
Formaldehyde	NIOSH
Acid/base/neutral extractables --	
RAS list plus parabenzoquinone; orthobenzylpara-chlorophenol (2-benzyl-4-chlorophenol); dimethyl aniline; 2,3,4,6-tetrachlorophenol; 2-butanone, and 4 (1,1 dimethylethyl) phenol	8720
Pesticides/herbicides, PCBs -- RAS list	8080
Herbicides 2,4-D and 2,4,5 TP Silvex	8150
Inorganics	
RAS list plus molybdenum	SW-846
Other Parameters	
TOC	SW-846
pH	SW-846

TABLE 7

GROUNDWATER PROTECTION STANDARDS
(Tables E-22 and 23 from Application)

ORGANICS

Constituent	Concentration Limit ug/l	Criteria
Volatiles		
Acetone	3,500	HAI-C
Benzene	5	MCL
Ethylbenzene	430	WQC-AL
Formaldehyde	50	PQL
Methylene chloride	5	PQL
Toluene	5,000	WQC-AL
Trans-1,2-dichloroethene	5	PQL
Trichloroethene	5	MCL
4-methyl-2-pentanone	10	PQL
1,1-dichloroethane	5	PQL
Vinyl chloride	2	MCL
Trichlorofluoromethane	10	PQL
Tetrachloroethene	5	PQL
Semivolatiles		
2,3,4,6-tetrachlorophenol	1,000	HAI-C
2,4,6-trichlorophenol	1.2	WQC-HH
2,4-dichlorophenol	100	HAI-C
2-chlorophenol	10	PQL
2-benzyl-4-chlorophenol	10	PQL
2-methylphenol	10	PQL
4-methylphenol	10	PQL
2-methylnaphthalene	10	PQL
Acenaphthene	10	PQL
Napthalene	10	PQL
Pentachlorophenol	50	PQL
Phenol	1,000	HAI-C
P-tert-butylphenol	1,000	HAI-C for phenol
Benzoic acid	50	PQL
Bis (2-ethylhexyl) phthalate	10	PQL
Di-n-octylphthalate	10	PQL
4-(1,1-dimethylethyl) phenol	10	PQL
4-chloro-3-methylphenol	10	PQL
Pesticides/PCBs		
2,4,5-TP	10	WQC-HH
2,4-D	100	MCL
4,4' DDE	0.1	PQL
4,4' DDT	0.1	PQL
Arochlor-1232	0.5	PQL
Arochlor-1242	0.5	PQL
Arochlor-1248	0.5	PQL
Beta-BHC	0.05	PQL
Heptachlor	0.05	PQL

TABLE 7
(Continued)

GROUNDWATER PROTECTION STANDARDS

INORGANICS

Constituent	Concentration Limit ug/l	Criteria
Inorganics		
Antimony	10	HAI-C
Arsenic	50	MCL
Barium	1,000	MCL
Beryllium	175	HAI-C
Cadmium	10	MCL
Chromium	50	MCL
Cobalt	6.2	PQL
Copper	2.9	WQC-AL
Lead	50	MCL
Manganese	536	Background Shallow
	763	Background Inter.
	50	WQC-HH Deep
Mercury	2	MCL
Molybdenum	15	PQL
Nickel	50	Background Shallow
	16	PQL
Silver	50	MCL
Vanadium	700	HAI-C
Zinc	86	WQC-AL
Cyanide	10	PQL

PQL = Practical Quantitation Limit

MCL = Maximum Concentration Limit promulgated under 40 CFR Part 141 of the Safe Drinking Water Act

HAI-C = Chronic level for human acceptable intake

WQC-HH = Water Quality Criteria for protection of human health based on aquatic organisms and drinking water

WQC-AL = Water Quality Criteria for protection of saltwater aquatic life (chronic, or acute, if chronic not available)

Sources of Criteria

Superfund Public Health Evaluation Manual. OSWER Directive 9285.4-1, October 1986

Draft RCRA Facility Investigation Guidance. EPA 530/SW-87-001, OSWER Directive 9502.00-6c, Chapter 8, December 1987

Quality Criteria for Water. EPA Office of Water Regulations and Standards Document 440/5-86-001, May 1986. Commonly known as the "Gold Book."

EPA Integrated Risk Information System (IRIS) Data Base